Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.



Here, on Mt. Rose, Nevada, Dr. J. E. Church made the first western snow survey 50 years ago.

3/Kem



FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEY and WATER SUPPLY FORECASTS for

COLORADO, RIO GRANDE, PLATTE and ARKANSAS DRAINAGE BASINS

UNITED STATES DEPARTMENT of AGRICULTURE...SOIL CONSERVATION SERVICE, and

COLORADO AGRICULTURAL EXPERIMENT STATION, STATE ENGINEER of COLORADO and STATE ENGINEER of NEW MEXICO

Data included in this report were obtained by the agencies named above in cooperation with the U.S. Forest Service, National Park Service, Bureau of Reclamation, State Engineers of Utah and Wyoming; and other Federal, State and private organizations.

APR. 1, 1959

UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

TO RECIPIENTS OF COOPERATIVE SNOW SURVEY AND WATER SUPPLY FORECAST REPORTS:

The climate of the cultivated and populated areas of the West is characterized by relatively dry summer months. Such precipitation as occurs falls mostly in the winter and early spring months when it is of little immediate benefit to growing crops. Fortunately, most of this precipitation falls as mountain snow which stays on the ground for months, melting later to sustain streamflow during the period of greatest demand during late spring and summer. Thus, nature provides in mountain snow an imposing water storage facility.

The amount of water stored in mountain snow varies from place to place as well as from year to year and accordingly, so does the runoff of the streams. The best seasonal management of variable western water supplies results from fore-knowledge of the runoff.

A snow survey consists of a series of about ten samples taken with specially designed snow sampling equipment along a permanently marked line, about 1000 feet in length, called a snow course. The use of snow sampling equipment provides snow depth and water equivalent values for each sampling point. The average of these values is reported as the snow survey measurement for a snow course.

Snow surveys are made monthly or semi-monthly beginning in January or February and continue through the snow season until April, May or June. Currently more than 1300 western snow courses are measured each year. These measurements furnish the key data for water supply forecasts.

By relating snow survey measurements taken over a period of years to spring-summer runoff during the same period, relationships have been developed which make it possible to forecast seasonal runoff several months in advance of occurrence. In order to make a forecast, once a forecast relationship has been developed, the maximum snow water content at previously selected key snow courses is usually entered in the forecast relationship. More accurate forecasts are often obtained when other factors such as soil moisture, base flow and spring precipitation are considered and included in the forecast relationships.

Listed below are the Federal-State-Private Cooperative Snow Survey and Water Supply Forecast reports available for the West which contain detailed information on snow survey measurements, streamflow forecasts, reservoir storage, soil moisture and other guide data to water management and conservation decisions.

PUBLISHED BY SOIL CONSERVATION SERVICE

REPORTS	ISSUED	COOPERATING WITH	LOCATION
RIVER BASINS			
COLORADO, RIO GRANDE	MONTHLY (FEB MAY)	COLO. EXP. STATION	
COLUMBIA Includes Alaska	MONTHLY (JANMAY)	I DAHO STATE ENGINEER	BOISE, IDAHO
UPPER MISSOURI	MONTHLY (FEB MAY)	Mont.Agr.Exp.Station	BOZEMAN, MONTANA
WEST-WIDE	(OCT. 1, APR. 1 AND MAY 1)	COOPERATORS	Portland, Oregon
STATES			
	SEMI-MONTHLY	SALT R. VALLEY WATER	PHOENIX, ARIZONA
NEVADA	MONTHLY (FEB APR.)	NEVADA STATE ENGINEER	RENO, NEVADA
OREGON	MONTHLY (JANMAY)	ORE.AGR.EXP.STATION	PORTLAND, OREGON
UTAH	Monthly (JanMay)	UTAH STATE ENGINEERUTAH AGR.EXP.STATION	SALT LAKE CITY, UTAH
Washington	Monthly (FEBMAY)	Wash. State Deptof Conservation	SPOKANE, WASHINGTON
WYOMING	Monthly (Feb June)	WYOMING STATE ENGINEER	CASPER, WYOMING

Copies of the various reports may be secured from: Head, W

Head, Water Supply Forecasting Section Soil Conservation Service 209 S.W. 5th Avenue, Portland 4, Oregon

PUBLISHED BY OTHER AGENCIES

OTHER SNOW SURVEY REPORTS		
BRITISH COLUMBIA	MONTHLY	(FEBJUNE)
CALIFORNIAN	MONTHLY	(FEBMAY)

FEDERAL-STATE COOPERATIVE

SNOW SURVEYS AND WATER SUPPLY FORECASTS

for

COLORADO RIVER, PLATTE RIVER ARKANSAS RIVER AND RIO GRANDE DRAINAGE BASINS

Issued

April 10, 1959

Report Prepared By
Homer J. Stockwell, Snow Survey Supervisor
Fort Collins, Colorado
Jack N. Washichek, Assistant Snow Survey Supervisor
Fort Collins, Colorado

United States Department of Agriculture
Soil Conservation Service
and
Colorado Agricultural Experiment Station
Fort Collins, Colorado
and
State Engineer of Colorado
Denver, Colorado
and
State Engineer of New Mexico
Santa Fe, New Mexico

Issued By

Kenneth W. Chalmers State Conservationist Soil Conservation Service Colorado R. A. Young State Conservationist Soil Conservation Service New Mexico J. E. Whitten State Engineer State of Colorado

Sherman S. Wheeler, Director Colorado Agricultural Experiment Station S. E. Reynolds State Engineer State of New Mexico

General Series Paper No. 703 Colorado Agricultural Experiment Station

Snow Survey measurements in Wyoming, Utah, and Arizona are supplied by Snow Survey Supervisors, Soil Conservation Service, in those states.

WATER SUPPLY OUTLOOK COLORADO, RIO GRANDE, PLATTE AND ARKANSAS DRAINAGE BASINS

April 1, 1959

WATER SUPPLY OUTLOOK AS OF APRIL 1 IS AVERAGE OR BETTER FOR THE ARKANSAS AND PLATTE DRAINAGES IN EASTERN COLORADO AND WYOMING. STREAM FLOW FOR 1959 IS EXPECTED TO BE SLIGHTLY LESS THAN AVERAGE FOR THE YAMPA, WHITE AND UPPER COLORADO RIVERS ON THE WESTERN SLOPE AND ABOUT THREE-QUARTERS OF AVERAGE ON THE GUNNISON. SNOWFALL ON THE RIO GRANDE, SAN JUAN AND DOLORES WATERSHEDS WAS EXTREMELY DEFINICIENT DURING MARCH. AN ALREADY POOR WATER SUPPLY OUTLOOK FOR THESE STREAMS IN COLORADO AND NEW MEXICO DECLINED FURTHER DURING THE PAST MONTH. INFLOW TO ELEPHANT BUTTE WILL BE NEAR MINIMUM OF RECORD. STORAGE WILL PROVIDE A FAIR BUT INADEQUATE SURFACE WATER SUPPLY.

THERE WAS NO SNOW ON ARIZONA COURSES APRIL 1. STORED WATER IS WELL ABOVE AVERAGE ON THE SALT RIVER BUT POOR ON THE GILA. STORED WATER WILL SUPPLY A MAJOR SEGMENT OF 1959 SURFACE WATER SUPPLIES.

COLORADO. Snow pack to April 1 on the Platte and Arkansas drainage is generally normal or better with some deficiency along the Sangre de Cristo range of the Arkansas watershed. Carryover storage is above average, particlarly in larger reservoirs of the Colorad-Big Thompson system, the Denver Municipal supply and in John Martin. Soil moisture conditions in irrigated areas are good. Irrigation water is expected to be reasonably adequate, but in total somewhat less than for 1957 and 1958.

Stream flow on the Yampa, White and Upper Colorado rivers will be slightly less than average but no shortage along the main streams is expected. There will be late season shortage on the Gunnison for areas of limited reservoir storage. The deficiency of snowfall during the winter months was continued on the Rio Grande, San Juan, and Dolores watersheds during March. Snow measurements are all among the lowest of record for this date. Soils are dry in both mountain and irrigated areas. Severe water shortages are indicated for the heavy demand of the Rio Grande and Dolores.

NEW MEXICO. The flow of the Rio Grande through New Mexico is now expected to be near one-third of normal or among the lowest of record. Snow pack in Northern New Mexico is extremely deficient and mountain soils remain generally dry. Water supply outlook below Elephant Butte is improved with about 1,075,000 acre-feet stored in Elephant Butte and Caballo Reservoirs but inflow will probably be negligible from snow melt. The water supply outlook for the Tucumcari Project on the Canadian River and the Carlsbad Project on the Pecos River is good because of well above normal carryover storage.

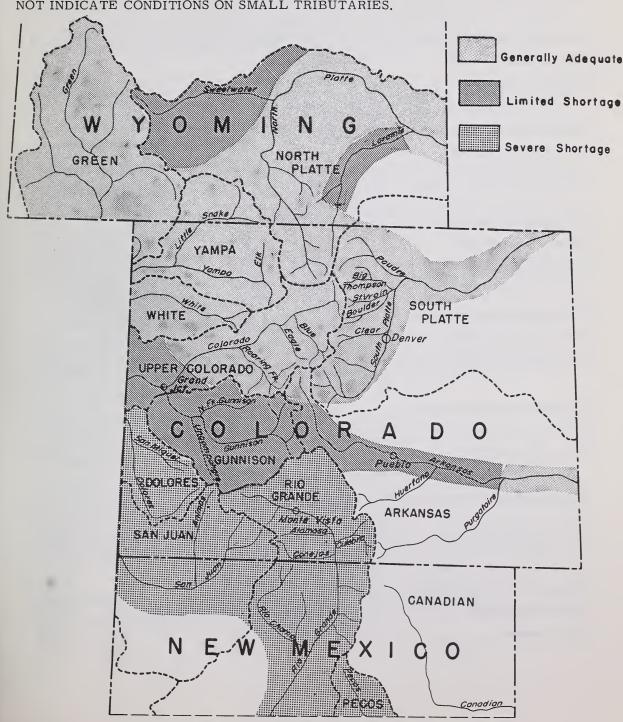
ARIZONA. There was no snow measured on Arizona snow courses April 1. The winter season was unusually dry in the mountains. Stream flow will be low but carryover storage will provide average surface water supplies for the Salt River Project. An extreme shortage is again in evidence for the Gila River irrigated area.

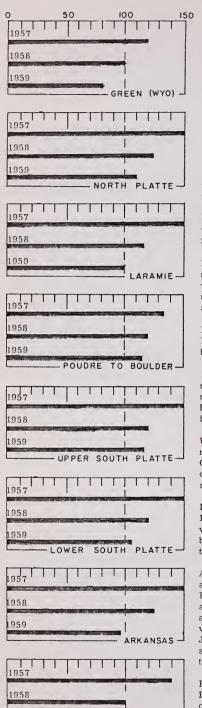
UTAH. Colorado River tributaries in Utah have very poor stream flow prospects in 1959. Forecasts are in the range of 50 percent of normal, comparable to Southwestern Colorado. Very little contribution will be made to the Colorado River.

COOPERATIVE SNOW SURVEYS SUMMARY OF SNOW MEASUREMENTS

	No. of	Years	Water C		WATERSHEDS	No. of Courses	Years	Water Content as percent of	
WATERSHEDS	Courses Averaged .	of Record	as perc 1958	Avg.	WAIERSHEDS	Averaged	Record	1958	Avg.
ARKANSAS RIVER					PLATTE RIVER				
Arkansas River	8	10-23	96	102	Sweetwater	2	19-22	130	74
					North Platte River	13	9-23	98	105
COLORADO RIVER					Laramie River	8	9-23	96	103
Colorado River*	27	8-23	108	111	South Platte River**	3	10-23	125	139
Roaring Fork	4	12-23	100	102	Poudre River	8	8-23	106	122
Plateau Creek	2	19-22	65	80	Big Thompson Raer	4	7-21	106	97
Yampa River	7	7-23	93	102	St. Vrain River	3	9-22	136	117
White River	2	22-23	90	105	Boulder Creek	2	9-22	114	138
Gunnison River	11	8-23	71	84	Clear Creek	5	8-23	111	109
Dolores River	4	10-23	43	61					
Green River (Wyo.) 5	19-23	110	105	RIO GRANDE				
San Juan River	6	8-23	46	46	Rio Grande (Colo.)	9	8-23	56	66
Animas River	8	8-23	52	67	Rio Grande (N. M.)	8	17-22	30	41
Gila River	9	9-119			Conejos River	3	10-23	60	45
Salt River	8	9-19			Chama River	4	17-23	40	42
Verde River	6	10-12			Pecos River	2	17-22	6	13
Little Colo, River	6	7-19			Canadian River	3	17-22	27	35
Williams River	2	12			Alamosa River	2	19-22	53	46
Lower Colo. River	4	11-12							
*Above Glenwood S	prings				**Above Denver				

THE MAP ON THIS PAGE INDICATES THE MOST PROBABLE WATER SUPPLY AS OF THE DATE OF THIS REPORT. ESTIMATES ASSUME AVERAGE CONDITIONS OF SNOW FALL, PRECIPITATION AND OTHER FACTORS DURING THE SPRING AND EARLY SUMMER MONTHS. AS THE SEASON PROGRESSES ACCURACY OF ESTIMATES IMPROVE. IN ADDITION TO EXPECTED STREAMFLOW, RESERVOIR STORAGE, SOIL MOISTURE IN IRRIGATED AREAS, AND OTHER FACTORS ARE CONSIDERED IN ESTIMATING WATER SUPPLY. ESTIMATES APPLY TO IRRIGATED AREAS ALONG THE MAIN STREAMS AND MAY NOT INDICATE CONDITIONS ON SMALL TRIBUTARIES.





PURGATOIRE-CUCHARAS

1959

THE BAR CHARTS ON THIS AND THE NEXT PAGE REPRESENT GRAPHICALLY THE MOST PROBABLE WATER SUPPLY OUTLOOK FOR 1959 AS COMPARED TO 1957 AND 1958. STREAMFLOW AND OTHER FACTORS FOR 1958 ARE PARTIALLY ESTIMATED AS FULL DATA ON WATER SUPPLY CONDITIONS ARE NOT YET AVAILABLE. ESTIMATES OF PAST CONDITIONS AND FORECASTS HAVE BEEN MADE BY THE AUTHORS OF THIS REPORT IN CONSULTATION WITH WATER OFFICIALS.

GREEN: The flow of the Green River in Wyoming will be less than average in 1959 but should be adequate to meet local needs. Snow pack near the headwaters in Wyoming is relatively heavier than near the Utah-Wyoming border.

NORTH PLATTE: Water supply on the North Platte will meet irrigation water demands for 1959. Inflow to Seminoe Reservoir will be about normal as indicated by April 1 snow measurements. Storage in major reservoirs in Wyoming, including the new Glendo reservoir, is 1,400,000 acre feet with 470,000 assigned to the North Platte project, which is nearly twice normal and a little less than for a year ago. Soil moisture conditions in valley areas are good.

LARAMIE: Snow cover on the headwaters of the Laramie River is near normal and similar to a year ago. Soil moisture conditions in the valley area are good. Summer stream flow is expected to be about normal. Reservoir storage is about one-half of that available a year ago totaling about 35,000 acre-feet in Wheatland reservoirs.

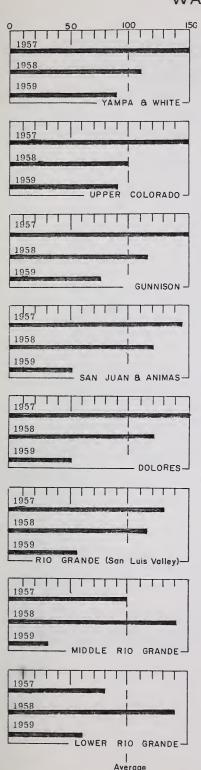
POUDRE-BOULDER: Water supply from natural sources on the Poudre, Big Thompson and St. Vrain Rivers and Boulder Creeks will be near normal for 1959. Mountain snow pack ranges from normal to 120 percent of normal, with a small area on Boulder Creek at about 140 percent of normal. Storage in smaller irrigation reservoirs is near average and somewhat less than for a year ago. In addition to natural stream flow, there is a total of about 150,000 acre-feet in Horsetooth and Carter Lakes and about 265,000 acre feet in Granby for the Colorado-Big Thompson project.

UPPER SOUTH PLATTE: Early season snow and soil moisture measurements indicate that the summer flow of the Upper South Platte and Clear Creek will be slightly above average. Municipal reservoirs of the City of Denver may be expected to fill again this year. Storage in irrigation reservoirs is a little less than for a year ago but above normal.

LOWER SOUTH PLATTE: The water supply outlook for the lower South Platte is good. Winter streamflow is above normal and larger reservoirs are expected to fill again this year. Summer stream flow will probably be near average but this is largely dependent on rainfall and irrigation water demands on the tributaries during the irrigation season.

ARKANSAS: Season snowfall has been near normal at Tennessee Pass and Fremont Pass with about 80 percent normal snowfall near Monarch Pass and along the Sangre de Cristo range to the south. Mountain soils are dry. Except for Twin Lakes, storage is better than average but not as good as for 1958. Soil moisture conditions are good for the lower valley. The general water supply outlook for the irrigated area above John Martin Reservoir is near average. With near 250,000 acre-feet stored in John Martin Reservoir, the outlook for irrigation water below the reservoir is excellent.

PURGATOIRE-CUCHARAS: The flow of the Huerfano, Cucharas and Purgatoire Rivers will be in the range of 50 to 70 percent of normal based on present snow measurements. Soil moisture conditions in valley areas are good. Much of the water supply outlook depends on later precipitation.



YAMPA-WHITE: Snow pack is slightly above normal on the head-waters of the Yampa River and the White River. Soil moisture conditions in valley areas are fair. Mountain soils are dry. Water supply is expected to be adequate to meet demands on these streams this year.

UPPER COLORADO: Snow pack is about normal for this date on the Colorado River and Roaring Fork above Glenwood Springs. Summer stream flow is expected to be slightly less than normal. There may be late season shortage along small tributaries where there is no storage. Soil moisture conditions are only fair reflecting the summer and fall drouth.

GUNNISON: Snow pack is now about 80 percent of normal on mountains surrounding the drainage. There will be some water shortage on smaller tributaries in late season. Soil moisture conditions in irrigated areas are reported as good. Storage in Taylor Park Reservoir is below normal and 70 percent of a year ago but should fill with spring runoff.

SAN JUAN-ANIMAS: The snow pack on these watersheds declined sharply during March and is now less than one-half of normal. Mountain soils are relatively dry although some wetting from snow melt has occurred. Summer runoff is forecast at about one-half of normal. Some shortage may be expected for heavy demand areas on the Pine and Florida and other smaller tributaries. Storage in Vallecito is 47,000 acre-feet which is near average but two-thirds of that stored a year ago.

DOLORES: Water supply outlook for the Dolores also declined during March. Snow pack is about 40 percent of normal. Stream flow is forecast at about 50 percent of normal. A severe shortage of water is in evidence for the Montezuma irrigated area.

RIO GRANDE-SAN LUIS VALLEY: Water supply outlook for the San Luis Valley is poor in contrast to the 1957 and 1958 water years. Snow pack is about two-thirds of normal with many courses at a minimum of record for April 1. The shortage may not be quite as severe as in the 1954-56 years because of improved groundwater levels. Storage is less than half of that available last year. Valley soil moisture conditions are reported as fair to poor.

MIDDLE RIOGRANDE (New Mexico): The deficiency of snowfall to date in Southern Colorado extends into Northern New Mexico. Mountain soils are dry. Storage is less than normal. The water supply outlook through the middle Rio Grande Valley and for the small tributaries in Northern New Mexico is poor.

LOWER RIO GRANDE: Storage in Elephant Butte and Caballo Reservoirs totals about 1,080,000 acre-feet which is about normal and greater than for any recent year. Inflow will be negligible and surface water shortage is definitely indicated. Soils in the irrigated area are dry

Water supply outlook is good for the Tucumcari Project on the Canadian River and for the Carlsbad Project on the Pecos River. As with the Lower Rio Grande, stream flow is expected to be below normal but carryover storage is well above normal and a year ago.

FOR DETAILS ON WATER SUPPLY CONDITIONS ON 'THE COLORADO RIVER DRAINAGE IN UTAH AND ARIZONA, NOT LISTED OR DISCUSSED IN THIS REPORT, REFERENCE SHOULD BE MADE TO THE STATE SNOW REPORTS FOR UTAH AND ARIZONA (see inside cover).

STREAMFLOW FORECASTS

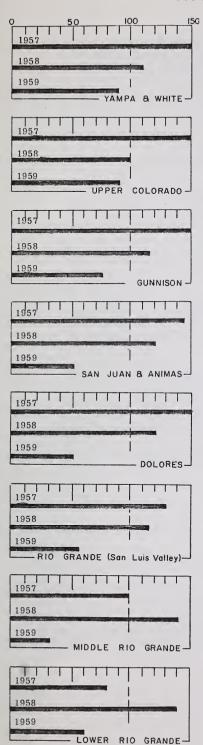
APRIL-SEPTEMBER INCLUSIVE April 1, 1959

"The following summarized runoff forecasts are based principally on mountain snow cover and on the assumption that precipitation and temperature during the forecast period will be near average. Appreciable deviations from normal of temperature and/or precipitation during the forecast period will correspondingly modify these forecasts."

BASIN AND STREAM	Forecast 1000 AF	%Avg. 1938-52	15-Yr. Avg. 1938-52	BASIN AND STREAM	Forecast 1000 AF		15-Yr. Avg. 1938-52
NORTH PLATTE				COLORADO			
Sweetwater at Alcova			73	Gunnison at Gr. Junction	1100	73	1510
North Platte at Saratoga	625	95	657	San Juan at Rosa, N.M.	300	43	703
Medicine Bow near Hanna			111	Piedra at Piedra	110	51	215
Laramie at Jelm	102	99	105	Los Pinos nr Bayfield (7)	130	57	228
				Florida nr Durango	37	54	69
SOUTH PLATTE				Animas at Durango	325	62	522
Cache La Poudre at Canon (1) 245	111	220	La Plata at Hesperus	16	53	30
Big Thompson at Drake	105	95	111	Dolores at Dolores	190	61	314
Saint Vrain at Lyons	95	108	88	Colorado nr Grand			
Boulder at Orodell	70	127	55	Canyon, Arizona	7300	73	10,069
Clear Creek at Golden (2)	160	113	141				
				GREEN RIVER			
ARKANSAS				Green at Linwood, Utah	1000	77	1302
Arkansas at Salida (3)	300	93	323	Little Snake at Lily	290	79	365
Arkansas at Pueblo (3)	325	81	401	Elk at Clark	180	84	214
Cucharas at La Veta	10	63	16	Yampa at Steamboat Spgs.	275	98	281
Purgatoire at Trinidad	28	49	57	White at Meeker	300	89	336
COLORADO				RIO GRANDE			
Colorado nr Granby (4)	235	118	199	South Fork at South Fork	′70	53	132
Willow nr Granby	40	93	43	Rio Grande at Del Norte (8)	290	51	565
Blue abv Green Mt. Res.	290	94	307	Alamosa above Terrace Res	. 35	45	78
Colorado at Glenwood Spgs. (5) 1475	96	1540	Conejos at Mogote	120	55	220
Roaring Fork at Glenwood (6) 675	87	777	Culebra at San Luis (9)	17	57	30
Plateau Creek at Collbran	40	65	62	Rio Chama nr La Puente	100	38	265
Uncompangre at Colona	115	68	170	Costilla at Costilla	17	50	34
Surface Cr. nr Cedaredge	13	72	18	Rio Grande at Otowi Bridge	(10) 280	33	851
Williams Fork nr Parshall	90			Rio Grande at San Marcial (15	619
				Pecos at Pecos	25	40	62

- Observed flow minus diversions from Michigan, Colorado and Laramie Rivers, plus diversions for irrigation and municipal use.
- (2) Observed flow minus diversions through Jones Pass Tunnel.
- (3) Observed flow plus change in storage in Clear Creek, Twin Lakes and Sugar Loaf Reservoir's minus diversions through Busk-Ivanhoe and Twin Lake Tunnels and Ewing, Fremont Pass, Wurtz and Columbine Ditches.
- (4) Observed flow plus diversions by Adams tunnel and Grand River ditch plus change in storage in Granby Reservoir.
- (5) Observed flow plus the changes as indicated in (4) plus Moffat Ditch.

- (6) Observed flow plus diversion through Twin Lakes tunnel.
- (7) Observed flow plus changes in Vallecito Reservoir.
- (8) Observed flow plus change in storage in Santa Maria, Rio Grande, and Continental Reservoir.
- (9) Observed flow plus changes in storage in Sanchez Reservoir.
- (10) Observed flow plus changes in storage in Santa Maria, Rio Grande, Continental, Terrace, Sanchez, Platoro and El Vado Reservoirs.



Average

YAMPA-WHITE: Snow pack is slightly above normal on the headwaters of the Yampa River and the White River. Soil moisture conditions in valley areas are fair. Mountain soils are dry. Water supply is expected to be adequate to meet demands on these streams this year.

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STATUS OF RESERVOIR STORAGE

-			U	SABLE S	STORAGE	USABLE STOR	AGE
		USABLE	_	1000 A		USABLE 1000 A.F.	
	RESERVOIR	CAPACI		1050	15-yr. Avg.		yr. Avg.
_		1000 A.F	1959	1958	1938-52	1000 A.F. 1959 1958 19	38-52
	NOR'	TH PLAT	TE DRAI	NAGE		A DIVANGA G DD ATNA GE	
	11011		Dittill			ARKANSAS DRAINAGE Twin Lakes 57.9 39.3	25.2
	Kingsley	1900.0	1510.0	1076.0	1182.4*	Sugar Loaf 17.4 5.9 15.4	8.1
	Sutherland	70.0	46.6	44.0	51.1	Clear Creek 11.4 5.3 9.4	5.1
	Minatare	58.8	38.8	33.2	23.8		18.5
	Alcova	190.3		188.1	91.1	Horse Creek 26.9 2.8 22.3	9.1
	Seminoe	1011.6	597.6	561.7	305.4*		26.4
	Guernsey	44.8	8.3	30.0	40.0	Cucharas 40.0 5.9 17.0	6.1
	Pathfinder	1015.9	4.6	797.0	456.1		78.6*
	Kortes	4.7		4.6			52.0
						Model 15.0 5.0 5.7	3.7
	SOU	JTH PLAT	TE DRA	INAGE			61.7*
							*
	Windsor	18.6	12.4	14.4	11.1		
	Cache la Poudre	9.5	8.6	8.4	6.8	COLORADO DRAINAGE	
	Fossil Creek	11.6	7.4	9.7	7.5	Taylor Park 106.2 56.7 83.2	63.3
	Terry Lake	8. 2	5.0	5.8	4.5	Vallecito 126.3 47.0 66.2	38.7*
	Halligan	6.4	5.0	6.3	1. 9	Groundhog 21.7 5.8 15.6	9.1
	Chambers Lake	8.8	2.0	2.0	2.7	Granby 465.5 246.0 286.2	136.2*
	Cobb Lake	34.3	17.8	18.9	4.7	Green Mountain 146.9 49.1 70.9	. 56.4*
	Black Hollow	8.0	4.0	3.7	3.4	Lake Mead 27,207.0 20,735.0 19,092.0 1	8,493.0
	Carter	108.9	81.5	100.5	*	Lake Havasu 688.0 565.8 598.9	578.3
	Horsetooth	143.5		120.4	*	Lake Mohave 1,810.3 1,702.8 1,737.9	1, 113.9
	Lake Loveland Boyd Lake	14.3	10.4	10.0	4.4		
	Lone Tree	44.0 9.2	42.2		15.5	RIO GRANDE (COLO) DRAINAGE	
	Mariano	5.4	7.8		6.2	Rio Grande 51.1 7.6 41.9	16.7
	Union	12.7	4.2 9.5		2.5	Santa Maria 43.6 7.8 14.9	9.9
	Eleven Mile	81. 9	9. 5 97₃ 8		7.1	Sanchez 103.2 24.9 36.1	13.2
	Cheesman	79.0	59.6		75. 7	Terrace 17.7 2.6 1.7	3.7
	Marston	18.9	15.2		56.6 15.3	Continental 26.7 2.9 12.0	7.5
	Antero	33.0	15. 2		15.3	Platoro 60.0 34.0 30.5	*
	Gross	43.1	18.5		14.0		
	Barr Lake	32.2	24.2		20.8	RIO GRANDE (N. M.) DRAINAGE	
	Milton	24.4	16.1		11.9		878.9
	Standley	18.5	10. 3		12.1		171.2
	Marshall	10.3	2.8	7. 1	2.9	El Vado 226.0 2.5	46.6
	Horse Creek	20.6	13.3	13.6	9.8	Alamogordo 128.0 125.0 98.0	56.8
	Riverside	57.5	57.5	57.5	46.6	McMillan-Avalon 37.0 32.0 28.0 Red Bluff(Tex) 307.0 107.3 35.9	16.7 *
	Empire	37.7	33, 3		30.4	Red Bluff(Tex) 307.0 107.3 35.9	*
	Jackson Lake	35.4	33.9	34.2	33.4	SALT AND GILA DRAINAGE	
	Prewitt	32.8	28, 6	25.4	22 4		516.9
	Point of Rocks	70.0	70.6	64.6	57.3	1,000,0	194.5
	Julesburg	28.2	21.0	19.7	21.5	Mormon Flat 58.0 53.4 54.0	43.7
						Saguaro 70.0 47.7 64.3	43.5
						Bartlett 180.0 71.4 144.6	75.9
	*Shorter Period						31.3
						Carl Pleasant 163.8 18.3 22.3	33.9
							205.9
						1,200,0	

VALLEY PRECIPITATION 1/

Division Averages and Departures 3/ April 1, 1959

	Fall			nter			Fall	Wi	nter
DRAINAGE	SeptOct.	-Nov.	Dec.		DRAINAGE	Sept.	-OctNov.	Dec. th	ru Feb
DIVISIONS	Avg.	Dept.	Avg.	Dept. ⁴	DIVISIONS	Avg.	Dept.	Avg.	Dept. 4
North Platte River, Wyo.	1. 27	-1.47	2.02	43	Colorado River, Ariz.				
South Platte River	2.08	84	2.27	f.70	Gila River, Arizona	7.18	+3.19	. 86	-1.90
Arkansas River	1.97	82	2.17	7.06	Canadian River, N.M.	2.55	-1.32	1.52	32
Colorado River	3.32	90	3.71	86	Rio Grande, Colo.	2.23	57	1.37	07
Green River, Wyo.	1.45	-1.07	1.47	26	Rio Grande, (N), N. M.	4.11	+ .43	1.32	-1.72
San Juan River, N.M.	3,40	<i>f</i> .57	1.11	-1.27	Rio Grande (S), N. M.	4.46	-2.01	. 44	96
					Pecos River, N.M.	4.47	-1,53	. 72	-1, 15
1/ Preliminary analysis by furnished by Meteorolog Bureau					2/ Departure from aver 3/ Selected Stations	age			

AVAILABLE SOIL MOISTURE IN INCHES*

DRAINAGE BASIN	Profile	Soil M	oisture	Content :	in Inches	DRAINAGE BASIN	Profile	Soil M	oisture (Content i	n Inches
AND	Depth	Cap.	1959	1958	1957	AND	Depth	Cap.	1959	1958	1957
STATION	Inches	In.	In.	In.	In.	STATION	Inches	In.	In.	In.	In.
NORTH PLATTE						UPPER COLORAD	00				
Columbine Lodge	48	8.0	0.5	5.0	0.6	Vain Pass	48	8.0			
Willow Creek	48	7.0	0.6	6.8	1.0	Ranch Creek	48	7.0	2.7	4.6	1.8
Windy Point	48					Hairpin	48	8.0	0.1	4.8	0.0
Barrett	48					Vasquez	48	7.0	3.9	5.3	3.9
						Gore Pass	48	7.0	0.1	1.5	1.6
SOUTH PLATTE						Blue River	48	7.0	0.4	4.3	0.3
Red Feather	48	6.0	0.1	0.6	0.2						
Chambers Lake	48	7.0	0.8	2.8	2.0	GUNNISON					
Deer Ridge	48	6.0	0.3	0.8	0.7	Monarch Pass	48	8.0	5.6	5.3	3.4
Hidden Valley	48	8.0	1.2	3.8	2.0						
Longs Peak	48	7.0	0.3	0.8	0.5	RIO GRANDE (Col	o.)				
University Camp	48	7.0	0.5	1.2	0.8	Bristol View	48	7.0			
Berthoud Falls	48	6.0	1.2	1.8	0.4	Wolf Creek Pass	48	9.0	0.5	6.4	0.7
Alma	48	7.0	0.2	2.7	0.6	River Springs	48	7.0	0.3	3.5	2.1
Kenosha Pass	48	7.0	0.1	4.7	0.9	La Veta Pass	48	8.0	6.1	4.5	2.6
ARKANSAS						RIO GRANDE (N. 1	NT N				
Leadville	48	7.0	0.3	1. 9	1.2	Red River	48	7.0	0.2	3.8	0.5
Lake Creek	48	6.0	2.6	3. 7	2.7	Tres Ritos	48	7.0	0.9	5.6	3.5
Garfield	48	7.0	2.7	5.3	3.4	Bateman	48	8, 0	1.0	7.7	3.2
darrierd	40	1.0	4.1	0.0	5.4	Chamita	48	8.0	2.6	7.3	7.5
ROARING FORK						Chamita	40	0.0	2.0		
Placita	48	8.0	0.9								
Maroon	48	8.0	0.2	2.9	0.7						

^{*}Three to six years of record. Interpretation methods are tentative.

SNOW COURSE MEASUREMENTS

SNOW COURSE		Depth 1959		er Con		Years of	SNOW COURSE		epth 1959		ater Cor		Years of
	Date	Inche	s 19 <u>5</u> 9	1958	Avg.	Record		Date I	nches	1959	1958	· Avg.	Record
	PLA	TTE F	RIVER DE	RAINAC	Æ	**		PLAT	TE RI	VER DE	RAINAG	E	**
SWEETWATER	RIVER						CLEAR CREEK						
Grannier Meado		36	10.0	8.0	14.1	22	Loveland Pass	3/30	56	18.7	14.9	16.4	23
South Pass*	4/2	40	11.6	8.6	14.9	19	Grizzly Peak*	3/30	59	17.8	18.6	19.1	21
Larsen Creek	3/31	38	9.2	8.4		9	Empire	3/31	43	9.1	6.9	7,2	10
							Berthoud Falls	· .	54	16.5	14.1	14.2	8
NO. PLATTE RI Cameron Pass	4/3	82	30.9	29.4	21.8	23	Clear Creek	4/1	58	16.9	16.8	15.8	8
Park View	3/31	35	9.3	7.7	10.6	23	SOUTH PLATT	FBIVE	2				
Columbine Lodge	,	79	27.9	25.6	23.5	23	Hoosier Pass	3/30	57	17.9	15.0	12.7	23
Willow Cr. Pass		45	12.4	10.8	13.5	21	Jefferson Cr.	3/30	40	12.6	10.6	9. 1	18
Northgate	3/31	27	6.7	7.6	6.6	9	Geneva Park	3/31	21	5.6	3.2	4.2	10
Bottle Creek	3/31	44	14.2	12.7	14.3	23							
Webber Spring	3/31	50	16.5	16.3	19.2	23		ARKAN	SAS R	VER D	RAINAC	Œ	
Old Battle	3/31	84	27.0	33.8	32.3	23							
N. French Creek		95	35.5	38, 3	30, 1	21	ARKANSAS RIV		4.0				0.0
N. Barrett Creel		63 41	20.4	25.5	20.4	23 23	Tennessee Pass	· .	43	12.5	11.1	9.8	23
Ryan Park	4/1	41	11.7 Dropped	13.0	11.7	43	Twin Lakes T. La Veta Pass*	3/31 4/1	43 24	12.0 8.1	15.1 7.2	10.8	23 23
Spring Creek Albany	3/30	51	16. 1	14.4	14.7	10	4 Mile Park	3/30	23	6.9	5.1	3.9	23
LaBonte	3/29	28	8.0	5.7	7.4	9	Fremont Pass	4/1	58	16.9	15.9	16.6	23
Boxelder	4/2	30	9.6	5.9	7. 1	9	Blue Lakes	-/ -	NS	NS	NS		
	,						Monarch Pass	3/30	57	17.6	20.8	19.0	18
LARAMIE RIVER	1						Saint Elmo	3/31	40	9.8	12.0	12.3	10
Roach	4/3	54	17.1	17.8	19.5	19	Timberline				20.9	19.4	10
Deadman Hill*	3/27	49	16.2	20.6	15.5	22	East Fork	3/31	41	11.8	10.2		17
McIntyre	4/1	42	12.0	10.8	11.8	9	Westcliffe	3/30	25	7.4	7.8		7
Brooklyn Lake	3/27	70	24.3	26.0	22.6	23	Bourbon	4/1	20	6.8	8.9		3
Fox Park Pole Mtn.*	$\frac{4}{1}$ 3/26	30 29	6.9 6.0	9.1 5.5	8.0 5.5	23 22		COLOR	ADO I	orazan r	DRAINA	CB	
Libby Lodge	3/27	41	12.3	10.8	10.3	23		COLOR	ADO I	FIACE I	NUMIN	GE	
fairpin Turn	3/27	44	13.9	12.5	11.9	23	COLORADO RIV	ER (Ab	ove Gle	boowne	Springs	١	
Albany	3/30	51	16.1	14.4		10	Cameron Pass*		82	30.9	29.4	21.8	23
v							Phantom Valley	4/2	40	11.3	10.3	10.5	23
POUDRE RIVER							Hoosier Pass*	3/30	57	17.9	15.0	12.7	23
Cameron Pass	4/3	82	30.9	29.4	21.8	23	Berthoud Pass	3/30	61	17.9	17.0	16.1	23
Chambers Lake	3/28	42	14.6	10.7	8.2	23	Tennessee Pass		43	12.5	11.1	9.8	23
Big South	3/28 $3/27$	16 49	5.0 16.2	20.6	2.8 15.5	23 22	M. Fork Camp (11.6 18.2	9.6	10.3	23 22
Deadman Hill Lake Irene*	4/2	70	20. 1	23.7	22.3	21	Fiddler Gulch Lulu	3/31 3/28	59 62	19.1	15.8 20.6	16.5 17.7	21
four Glass Lake		35	9.4	7.2	9.1	19	Willow Creek P.		45	12.4	10.8	13.5	21
Red Feather	4/1	35	9.8	6.3	9.7	10	N. Inlet Grand L	٠,	38	10. 1	9.0	9.9	21
Lost Lake	3/28	51	16.9	13.2	11.1	8	Lake Irene	4/2	70	20.1	23.7	22.3	21
							Arrow	3/31	50	15.3	12.4	10.5	21
IG THOMPSON I							Lapland	3/30	44	14.4	11.3	12.0	21
ake Irene*	4/2	70	20.1	23.7	22.3	21	Fremont Pass	4/1	58	16.9	15.9	16.6	23
idden Valley	3/30	48 25	13.1	9.9	12.5	18 10	Lynx Pass	3/30	45 63	13.9 17.6	12.4 20.2	13.3 18.4	23 17
eer Ridge ongs Peak	3/30 $3/29$	45	5.9 12.6	3.9 11.1	6.3 12.0	7	Shrine Pass Grizzly Peak	3/31 3/30	59	17.8	18.6	19. 1	17
wo-Mile	3/30	54	15.8	14. 2		6	Glen-Mar Ranch		36	10.7	9.1	10.3	12
	0,00	0 2	20.0					3/31	34	9.9	8.8	12.0	11
T. VRAIN RIVER	3							3/31	30	7.2	7.1	8.4	10
ild Basin	4/1	63	14.9	11.4	14.6	22		4/3	34	8.5	6.6	.9.6	10
opeland Lake	4/1	21	6.5	5.7	5.7	10	Berthoud Summit		77	25.7	23.2	18.5	8
ard	3/31	37	10.5	6.4	7.0	9		3/31	54	15.6	13.7	12.1	8
OIII DED 40	_							3/30	39	11.5	9.4	9.3	8
OULDER CREEF niversity Camp		0.1	20 7	21 2	22 6	22	Frisco	3/31 4/1	34 36	8.4 10.7	8.6 7.8	8.7 9.0	8 8
loffat	3/30 4/1	81 52	29.7 13.1	21.3 16.2	22.6 8.4	9		4/1	31	8.1	6.3	8.7	8
oulder Falls	3/30	59	21.1	11.0		6		3/31	60	20.1	20.8		7
and I will	2, 30		1					4/1	42	10.6	12.7		7
								3/31	47	13.0	12.8		7
On adjacent dra							1	4/2	50	15.3	15.9		7
Avenage for co	urses					cord dur-		3/30	46	14.1	11.6		2
										1 7 0			2
ing the period	1938-5	2 are	partially	estima	ted.			3/31	58	17.2	16.0		
	1938-5	2 are	partially	estima	ted.		Ranch Creek	3/31 3/30 3/30	58 41 54	17. 2 11. 8 12. 5	9.8 12.7		2 2

SNOW COURSE MEASUREMENTS

SNOW COURSE		Depth	Water In In	Content		Years	SNOW COURSE	Depth 1959		Content	t	Years
SNOW COURSE	Date	1959 Inches	1959	1958	Avg.	Record		Inches	1959		Avg.	or Record
	COLOR	ADO R	IVER D	RAINAGI	E	**	COLOR	ADO RI	VER DRA	INAGE		**
ROARING FORK							DOLORES RIVER					
Ind. Pass Tunnel	3/31	64	18.9	20.4	18.7	23	Rico 4/1	0	0.0	10.1	9 . 6	23
North Lost Trail	٠.	44	14.2	14.6	14.8	22	Telluride 3/30	17	3.8	9.8	7. 4	23
Nast	4/1	28	7.2	5.5	6.2	22	Lizard Head 4/1	45	13.1	24.1	17.1	21
Ivanhoe	4/1	59	18.0	16.5	18, 5	12	Trout Lake 3/30	37	11.0	20.4	12.9	10
Lift	3/26	45	13.5	16.6		1	SAN RAFAEL RIVER					
YAMPA RIVER							Hntngtn-Horseshoe 3/3	0 55	18.4	35.2	26.3	29
Dry Lake	4/1	66	21.8	25.7	20.3	23	Seeley Creek R.S. 3/3	28	9.5	23.8	16.8	29
Columbine Lodge	*3/30	79	27.9	25.6	23.5	23						
Elk River	4/1	55	18.6	19.5	17.4	23	VIRGIN RIVER					
Lynx Pass*	3/30	45	13.9	12.4	13.3	23	Long Valley Jnct. 3/27 Harris Flat R.S. 3/27	0	0.0	3.1	5.5	22
Routt Line		NS	NS NS	NS NS	NS 27. 8	7	Duck Crack R.S. 3/27	8	3.4	13.5	9.4	28
Rabbit Ears Yampa View		NS NS	NS	15.9	16.0	8	Cedar Breaks 3/25	17 37	7.2 12.1	18. 7 30. 4	17. 4 25. 0	24 24
Flat Top		NS	NS	NS			Webster Flats 3/25	36	11.6	22. 1	19.8	32
Bear River	4/3	43	14. 0	12.2		3	3/23	30	11.0	22.1	10.0	02
Clark	4/1	34	11.7	12.5		3	COLORADO R. (S. E. U	TAH)				
Old Battle	3/31	84	27.0	33.8	32.7	23	LaSal Mt. 4/1	23	7.11	14.6	11.5	28
							Buckboard Flat 3/30	21	7.4	15.8	15.3	29
VHITE RIVER	4/4	5.0	10.0	00 0	10 1	2.2	PRICE RIVER					
Burro Mountain	4/1	58	19.0	22.2	19.1 16.2	22 23		0.0	7 1	14.0	11 4	20
lio Blanco	4/1	47	17.9	18.7	10.2	23	Indian Canyon* 3/27 Gooseberry Res. 3/30	22 48	7.1 16.6	14.8 24.1	11.4	29 21
PLATEAU CREE	r						Staley Ranch 3/26	13	4.8	10.6	6.2	22
Mesa Lakes	3/30	47	15.9	27.6	18.2	22	Dry Valley Divide 3/26	21	6.7	13.8	10.8	24
Frickle Divide	4/1	66	22.5	31.5	29.7	19	Hntngtn-Horseshoe 3/3		18.4	35.2	26.3	29
	,						Mud Creek 3/26	30	9.9	17.1		4
GUNNISON RIVER	3											
Crested Butte	3/31	42	11.8	12.7	15.2	23	DUCHESNE RIVER					
Park Cone	3/30	32	7.1	10.7	10.8	22	Lake Fork Mt. 3/28	34	8.6	13.6	13.0	28
Alexander Lake	4/1	62	20.0	31.5	24.1	22 22	Paradise Park 3/29 Mosby Mt. (L) 3/29	33	7.9	12.8	13.4	27 28
ronton Park Frickle Divide	3/30 4/1	46 66	14.7 22.5	NS 31.5	14.4 29.7	19	Mosby Mt. (L) 3/29 Brown Duck Lake	27 NS	6. 1 NS	12.7 NS	12.4 19.4	13
Park Reservoir	4/1	60	20.5	30.9	27.4	19	Indian Canyon 3/27	22	7.1	14.8	11.4	29
orphyry Creek	3/30	53	15.4	19.7	17.5	19	3/2!	22	1.1	14.0	11.1	_
Kannah Cr.	0,00	NS	NS	NS	26.8	12	UPPER GREEN RIVER	(UTAH)				
Lake City	3/31	30	8.1	14.7	6.6	10	Hewinta R.S. 3/31	49	13.7	11.9	9.7	25
Spring Cr. Pass*	ŕ	NS	NS	NS			Hole-in-Rock 4/1	30	7.7	7.2	6.4	28
Cochetopa Pass*	3/30	26	6.0	7.3	4.8	10	King's Cabin (U) 3/20	39	10.3	11.5	11.4	29
McClure Pass	3/30	40	13.4	16.1	15.0	9	King's Cabin (L) 3/30	31	9.6	10.2	10.4	29
Red Mt. Pass	3/28	92	29.3	40.5	36.6	8						
Blue Mesa				NS		1	GREEN RIVER (WYOM	ING)				
							Dutch Joe 3/27	30	7.6	7.5	8.4	19
AN JUAN RIVER							Mulligan Park 3/26	34	9.1	10.6	10.8	23
Volf Creek Pass*	3/30	48	15.3	26.1	31.1	23	Kendall R.S. 4/1	51	16.0	8.6	11.1	22
Jpper San Juan	3/30	56	19.0	36.2	34.6	23	Loomis Park 3/26	49	17.2	15.4	16.7	22
Granite Peaks	3/30		0.0	5.8	7.0	18	Snyder Basin R. S. 3/30	49	15.8	16.5	10 5	4 22
La Plata		NS	NS	NS			Piney-LaBarge 3/30	53	18.7	20.5	18.5	22
Volf Creek Summ			15.7	29.4	30.8	8	GILA RIVER					
Chama Dívide*	3/30	0	0.0	5.7	2.6	19	Frisco Divide	0	0.0	3.9	0.5	19
Chamita*	3/30	14	3.0	12.3	9.6	16	State Line	0	0.0	2.0	0.5	19
NIMAS RIVER							Taylor Creek	0	0.0	0.0	0.0	13
Silverton Sub. S.	3/28	13	3.5	NS	5.2	21	Inman	0	0.0	0.0	0.0	9
ronton Park*	3/30	46	14.7	NS	14.4	22	Nutrioso	0	0.0	0.9	0.6	18
Cascade	3/28	20	6.2	15.3	12.8	23	Beaver Head	0	0.0	5.5	0.9	19
Spud Mt.	3/28	46	13.3	39.7	27.1	8	Coronado Trail	0	0.0	3.1	1.3	
Molas Lake	3/28	29	8.4	19.5	16.3	8	Rose Canyon	0	0.0		0.3	9
Howardville	3/28	37	9.2	17.3	13.8	8	Bear Wallow	0	0.0		1. 1	9
Mineral Creek	3/28	49	13.0	21.2	19.2	8						
Red Mt. Pass*	3/28	92	29.3	40.5	36.6	8						
							MS No Survey					

On adjacent drainage
 Averages for courses with less than 15 years of record during the period 1938-52 are partially estimated.

MS No Survey (a) Air observed

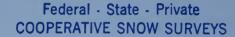
SNOW COURSE MEASUREMENTS

SNOW COURSE	Depth 1959		r Content		Years of	SNOW COURSE		Depth 1959		Content	Y	ears of
Date	Inches	. 1959	1958	Avg.	Record		Date	Inches		1958	Avg.R	ecor
coro	RADO R	IVER DE	RAINAGE		**	R	IO GI	RANDE	DRAIN	AGE		**
SALT RIVER						RIO GRANDE IN CO	OLOR	ADO				
Forest Dale	0	0.0	0.0	0.0	19	Pyramid						
McNary	0	0.0	0.0	0.2	19	Spring Creek			NS	NS		
Nutrioso	0	0.0	0.9	0.6	18	Pool Table	3/31	18	4.1	7.1	5.5	10
Coronado Trail	0	0.0	3. 1	1.3	17	L. Humphreys	3/31	18	4.6	6.9	5.6	10
Milk Ranch	0	0. 0	0.0	0.0	15	Cochetopa Pass	3/30		6.0	7.3	4.8	10
Workman Creek	0	0. 0	0.0	1.4	6	Red Mt.	3/28		29.3	40.5	36.6	8
Maverick Fork	0	0.0	14.0	3.3	7	Porcupine	4/1	31	8. 1	12.1	11.3	7
Baldy	0	0.0	11.9	3. 1	9	Wolf Creek Summit	3/30	52	15.7	29.4	30.8	8
Fort Apache	0	0. 0	10.3	5.6	9	Hiway	3/30		13.5	24.7		3
Pacheta	0	0.0	0.0	1.0	6	Pass Creek	3/30		6.4	9.5		3
						ALAMOSA RIVER						
VERDE RIVER						Silver Lakes	3/30	12	3.9	7.1	4.9	22
ron Springs*	0	0.0	0.0	0.0	12	Summitville	3/30		8.4	16.1	21.7	19
Camp Wood	0	0. 0	0.0	0. 0	12		,					
Mingus Mountain	0	0.0	0. 0	0.0	10	CONEJOS RIVER						
Mormon Lake*	0	0.0	1.9	4.2	10	River Springs	3/31	11	2.7	5.0	7.5	22
Fort Valley*	0	0.0	0. 2	1. 2	12	Cumbres Pass	3/31		10.6	18.3	22.9	23
Chalendar*	0	0.0	0.2	1.6	12	Platoro	3/30		8.7	13. 2	18.2	10
Munds Park	0	0.0	0.0	0.5	6	West Conejos	0,00	NS	NS	7.6	8, 1	10
Casner Park	0	0. 0	T.	0.8	5	La Manga		NS	NS	NS	21.9	10
Mormon Mt.	0	0.0	4. 1	2.8	7	2a mangu		110	110	110	51. 0	-
Tappy Jack	0	0.0	4. 1	3.1	4	SANGRE DE CRISTO	∩ D ∧ 1	VICE (CC	N OD A	מסו		
	U	0.0		3. 1	7	LaVeta Pass	4/1	24	8. 1	7.2	9.7	23
ITTLE COLORADO F	SIVER					Culebra	4/2	22	5.5	13. 1	11.7	19
Forest Dale*	0	0.0	0.0	0, 0	19	Guicsia	4/2	22	0.0	10. 1		
IcNary	0	0.0	0.0	0.0	19	CHAMA RIVER						
Jutrioso*	0	0.0	0.0	0. 2	18	Cumbres Pass	3/31	35	10.6	18.3	22.9	23
Iormon Lake	0			4. 2	10	Payrole	3/31		5.4	11.7	9.7	19
ort Valley	0	0.0	1. 9	1, 2	11	Chama Divide	3/30		0.0	5.7	2.6	19
Iormon Mt.	-	0.0	0.2		7	Chamita Chamita	3/30		3.0	12.3	9.6	17
	0	0.0	4.1	2.8			٠.			17.5	-=	9
lappy Jack	0	0.0		3. 1	4	Bateman	3/30	21	6.5	17, 5		9
Gentry	0	0.0	1.5	0. 1	6	DECOS DIVER						
leber	0	0.0	1.6	0.5	5	PECOS RIVER	4/1	0	0.0	5.6	2.2	22
Canyon Creek	0	0.0				Panchuela	4/1				5.4	17
ZIL I LANG DIVIND						Big Tesuque	3/31		1.0 4.1	9.5 13.4	J. 4	9
/ILLIAMS RIVER						Rio En Medio*	3/31	10	4.1	13.4		J
ron Springs	0	0, 0	0.0	0.0	12	DIO CDANDE IN NE						
amp Wood*	0	0.0	0.0	0.0	12	RIO GRANDE IN NE			2 6	9.8	7.9	22
Villow Ranch	0	0.0		0.0	6	Red River	4/1	12	3.6		5. 7	20
OWER GO! OF . TO T						Taos Canyon	4/1	6	2.2	7.3	3.4	22
OWER COLORADO R						Aspen Grove	3/31	9	2.0	7.5	5.2	21
right Angel	0	0.0	12.9	8.3	11	Hematite Park*	4/1	9	1.0	7.7	5.2	21
rand Canyon	0	0.0	0.0	0.9	11	Tres Ritos	4/1	11	2.4	9.0		19
ort Valley	0	0.0	0.0	1.2	12	Payrole	3/31	17	5.4	11.7	9.7	17
halender	0	0.0	0.0	1.6	12	Cordova	3/30		4.8	13.4	12.8	
						Big Tesuque	3/31		1.0	9.5	5.4	17 10
RIO G	RANDE	DRAINA	GE			Elk Cabin	4/1		1. 1	8.2	0.7	9
						Rio En Medio	3/31		4.1	13.4		
IO GRANDE IN COLO						Quemazon	3/31		6.3	17.4		9
olf Creek Pass 3/30	48	15.3	42.0	31.1	23	Fenton Hill	3/30	2	0.5	8. 2		6
pper Rio Grande 3/30		5.0	9.5	7.0	21							
anta Maria 4/1	12	2.1	7.6	4. 7	20	CANADIAN RIVER					F 0	0.0
						Hematite Park	4/1	9	1.0	7.7	5.2	22
						Tres Ritos	4/1	11	2.4	9.0	5.2	21
On adjacent drainage			r			Cordova	3/30	30	4.8	13.4	12.8	17
Average for courses				recor	d during							
the period 1938-52	are part	ially est	imated.									
S No Survey												

NS No Survey
(a) Air observed







Furnishes the basic data necessary for forecasting water supply for irrigation, domestic and municipal water supply, hydro-electric power generation, navigation, mining and industry

"The Conservation of Water begins with the Snow Survey"